

**Abstract**

Disclosed is a method for achieving a recallable hair deformation. A composition is applied onto hair, comprising at least one active agent, which, alone or in combination with further compounds, is able, after application to the hair and after carrying out the treatment of hair in accordance with the present invention, to provide a shape memory effect. The hair is brought into a defined (permanent) shape and the permanent shape is subsequently fixed by means of inducing a chemical or physical change of the applied agents, wherein after a desired or undesired deformation, the memory shape of the initial memory shape may be recovered by means of a physical stimulation. Suitable active agents are for example macromers which may be cross-linked to provide shape memory polymers, wherein the permanent shape is fixed by means of the chemical cross-linking of the macromer, providing a shape memory polymer, which possesses at least one transition temperature  $T_{trans}$ . Suitable active agents are also shape memory polymers, which have hard segments which may be cross-linked by physical interactions having a first transition temperature  $T'_{trans}$ , which preferably is at least 10°C above room temperature, and soft segments having a second transition temperature which preferably is at least 10°C below  $T'_{trans}$ . In addition to the permanent hairdo, a second (temporary) shape can be impressed. Furthermore, disclosed is a method for the recovery of a once

programmed permanent hairdo, which has been brought into a temporary shape or which has been deformed in any other way.

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